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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/673,115

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Andrew D. Flockhart

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EXAMINER

KARDOS, NEIL R

ART UNIT

PAPER NUMBER

3623

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/673,115	Applicant(s) FLOCKHART ET AL.	
	Examiner Neil R. Kardos	Art Unit 3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :9/26/03, 1/12/04, 1/29/04, 12/14/06, 6/14/07.

DETAILED ACTION

1. This is a non-final first Office action on the merits. Currently, claims 1-30 are pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 2-5, 9-20, 22, and 29-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claim 2 recites the limitation “placing a duration of non-business time period in a first position in said queue.” On its face, this limitation would appear to mean that the non-business time period is placed in position number one in the queue – that is, at the front of the queue. However, claim 4 further limits the "first position" to be at the tail of the queue, which is inconsistent with this interpretation. Another reasonable interpretation for this limitation is that the non-business time periods are placed in the queue prior to any other items being placed in the queue. However, claim 4 is also inconsistent with this interpretation because it is not clear how an item placed before any others can be at the "tail" of the queue.

Claims 2, 17, 22: The language of claims 2, 17, and 22 suggests that the start of a non-business time triggers the placement of a non-business time period in the queue (see last limitation, “placing a duration... when said non-business time begins”). If a non-business time period is not placed in the queue until that period begins, it is not clear why the non-business time period would be placed at the tail of the queue, as recited in claim 4.

Based on Applicant's language, Examiner is not sure how to interpret claims 2-4, and will apply prior art as best as possible.

The dependent claims 3-5 are also rejected because they fail to add substantial limitations to remedy the deficiencies of the claims that they depend from.

Claim 9 recites the limitation "said time commitments." There is insufficient antecedent basis to support this limitation in the claim.

Claims 10, 15, and 29 recite the limitation "subtracting from real time from the calendar start time." Based on the wording of this limitation, it is not clear whether the real time is being subtracted from the calendar start time or vice versa.

Furthermore, these claims recite "taking the modulus of the calendar time by the minimum time interval." This recitation is confusing because modulus has two common meanings. A modulus can be the remainder obtained from division (i.e. $3 \text{ MOD } 2 = 1$). A modulus can also mean the absolute value (i.e. $\text{MOD } -3 = 3$). The claim language is ambiguous because it could mean (1) determining the remainder when the calendar time is divided by the minimum time interval, (2) taking the absolute value of the calendar time and dividing the result by the minimum time interval, or (3) dividing the calendar time by the minimum time interval and taking the absolute value of the result.

Claims 10, 15, and 29 also recite "the calendar time" with insufficient antecedent basis for that limitation. This is especially confusing because the claim also recites "the calendar start time."

Based on Applicant's language, Examiner is not sure how to interpret claims 10, 15 and 29, and will apply prior art as best as possible.

Claims 11, 16, 30: Due to the confusion resulting from the language of claims 10, 15, and 29, it would be unclear to one of ordinary skill in the art how to proceed with the operations of claims 11, 16, and 30. These claims recite "determining the remainder of the modulus operation of said taking the modulus step." Using interpretation (1), above, the modulus step determines the remainder, and it is unclear what additional operations are being performed in these claims. Interpretations (2) and (3) do not necessarily include any type of rounding or dropping the remainder; thus their results could be a decimal answer with no remainder. Until claims 10, 15, and 29 are clarified, a reasonable interpretation of claims 11, 16, and 30 includes performing no additional steps beyond what is performed in the preceding claims. Therefore, any prior art which discloses the limitations of claims 10, 15, and 29 will also disclose the limitations of claims 11, 16, and 30.

Claim 12 recites a system made up of components that do not necessarily make up a physical structure. It is unclear how a scheduler, timer, and calendars (which could all be software) constitute a system.

The dependent claims 13-20 are also rejected because they fail to add substantial limitations to remedy the deficiencies of the claims that they depend from.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. **Claims 12-20 and 21-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

Claim 12 recites a system comprising a scheduler, a timer, and a plurality of calendars.

These components do not necessarily make up a physical structure. Rather, they merely constitute procedures that do not require an accompanying structure. Such procedures, in a reasonably broad sense, are merely a collection of steps to be followed in order to achieve a desired outcome (i.e. a collection of computer instructions). In a reasonably broad sense, claim 12 is directed to computer instructions that lack any tangible structure. Claim 12 could merely be software. However, claim 12 does not tangibly embody this software on a computer-readable medium. Claim 12 does not recite any physical structure that would serve to constitute a “system.”

The dependent claims 13-20 are also rejected because they fail to add substantial limitations to remedy the deficiencies of the claims that they depend from.

Claims 21-30 recite functional descriptive material (i.e. computer program) that does not impart functionality when employed as a computer component because the functional descriptive material is not tangibly embodied on a computer-readable medium. (See MPEP 2106.01(I)).

A “computational component” could consist of coded instructions (i.e. software), which is non-statutory subject matter.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3623

7. Claims 1-4, 6-8, 12, 17, 19-22, 24-25, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by “Microsoft Project 2000 Training Manual” (“MS Project 2000”).

Claim 1: MS Project 2000 discloses a method for allocating resources, comprising:

- providing a resource allocation system comprising at least one queue of work items (see module 2.1: pages 11-12, disclosing queued tasks), each of the work items having an associated service time (see module 2.2: page 35, disclosing deadlines for tasks), and at least one resource to service the work items (see module 2.1: page 13);
- placing a time delay corresponding to a non-business time period in at least one position of said queue (see module 2.2: page 24, disclosing applying nonworking time to a task); and
- allocating resources associated with said queue according to predetermined algorithms (see module 2.4: pages 74-76, disclosing algorithms for associating resources with tasks).

Claims 2, 17, 22: MS Project 2000 discloses:

- accessing a calendar associated with said queue, said calendar including entries corresponding to business time and non-business time (see module 2.2: page 24, disclosing applying working and nonworking times to a task calendar);
- determining when a non-business time period begins (see id.); and
- placing a duration of said non-business time period in a first position in said queue when said non-business time begins (see id.).

Claim 3: MS Project 2000 discloses wherein said first position is at the head of said queue (see module 2.2: pages 24-30, disclosing allowing the user to insert nonworking time in any position).

Claim 4: MS Project 2000 discloses wherein said first position is at a tail of said queue (see id.).

Claim 6: MS Project 2000 discloses wherein said resource allocation system includes a plurality of queues of work items, each of said plurality of queues having an associated calendar indicating business time and non-business time periods (see module 2.2: pages 24-30, disclosing a different calendar for each task).

Claims 7, 20, 25: MS Project 2000 discloses wherein said predetermined algorithms perform resource allocation for each of said plurality of queues independently of the calendar associated with the queues (see id.; specifically page 24, disclosing scheduling tasks based on working and nonworking times that are unrelated to the resources assigned to the task).

Claims 8, 27: MS Project 2000 discloses displaying, at a user interface, a resource status associated with a first queue of said plurality of queues, the resource status being displayed in relation to a real time clock included in the resource allocation system (see module 2.2: page 35; module 2.3: pages 54 and 64).

Claim 12: MS Project 2000 discloses a resource allocation system, comprising:

- a scheduler operable to receive work items, determine a service time for said work items, place said work items into one of a plurality of queues, and allocate resources for each of said queues according to predetermined resource allocation

algorithms (see module 2.1: pages 11-12, disclosing queued tasks; module 2.2: page 35, disclosing deadlines for tasks; see module 2.1: page 13);

- a timer operable to time the duration of items in said plurality of queues (see module 2.2: page 35; module 2.3: pages 54 and 64);
- a plurality of calendars corresponding to said plurality of queues, wherein each queue has an associated calendar, and wherein each calendar has entries corresponding to business time and non-business time (see module 2.2: pages 24-30, disclosing applying working and nonworking times to a task calendar),
- wherein said scheduler is operable to monitor each of said calendars and, upon the start of a non-business time for a first calendar, place a time delay corresponding to the length of said non-business time into the queue associated with the first calendar (see module 2.2: page 24, disclosing applying nonworking time to a task).

Claim 19: MS Project 2000 discloses wherein said scheduler is operable to:

- determine which of said plurality of queues into which said work item should be placed, each of said queues having an associated calendar including business time and non-business time periods (see module 2.2: pages 24-30, disclosing a different calendar for each task); and
- place said work item at the tail of one of said plurality of queues based on said determination (see module 2.2: pages 24-30, disclosing allowing the user to insert nonworking time in any position).

Claim 21: MS Project 2000 discloses a computational component for performing a method, the method comprising:

- receiving a work item at a resource allocation system (see module 2.1: pages 11-12, disclosing queued tasks);
- determining a service time for said work item (see module 2.2: page 35, disclosing deadlines for tasks);
- placing said work item into a queue (see module 2.1: pages 11-12);
- placing a time delay corresponding to a non-business time period into said queue (see module 2.2: page 24, disclosing applying nonworking time to a task); and
- allocating resources associated with said queue according to predetermined algorithms (see module 2.1: pages 11-12, disclosing queued tasks; module 2.2: page 35, disclosing deadlines for tasks; see module 2.1: page 13).

Claim 24: MS Project 2000 discloses wherein said scheduler is operable to:

- determining which of a plurality of queues into which said work item should be placed, each of said queues having an associated calendar including business time and non-business time periods (see module 2.2: pages 24-30, disclosing a different calendar for each task); and
- placing said work item in one of said plurality of queues based on said determining step (see module 2.2: pages 24-30, disclosing allowing the user to insert nonworking time in any position).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 5, 18, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over MS Project 2000 in view of Official Notice.**

Claims 5, 18, 23, 26: MS Project 2000 does not explicitly disclose wherein said queue is a delta queue.

Examiner takes Official Notice that it was well-known in the queuing arts at the time the invention was made to use delta queues (see e.g. Applicant's admission that delta queues are known in the art: Applicant's specification, paragraph 27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate well-known queuing techniques into the method disclosed in MS Project 2000. One of ordinary skill in the art would have been motivated to do so for the benefit of efficiencies gained by using delta queues, which are well-known in the art.

10. **Claims 9, 13-14, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over MS Project 2000 in view of “MS Project 1998 Support Course” (“MS Project 1998”).**

Claims 9, 28: MS Project 2000 discloses wherein said displaying step comprises:

- determining the service time for work items in said first queue (see module 2.2: page 35, disclosing determining the finish date of a task);

- selecting the calendar associated with said first queue (see module 2.2: pages 24-30);

MS Project 2000 does not explicitly disclose the remainder of the limitations of this claim.

MS Project 1998 discloses:

- indexing said calendar into a table having a real time index (see module 5: lesson 5.2: pages 5-12 through 5-15, disclosing defining calendar hours so business days and operating hours can be interchanged); and
- computing said time commitments into a time interval according to said table (see id.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of MS Project 1998 into MS Project 2000 because it is a combination of known elements that would perform the same function as they did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 13: MS Project 2000 discloses a user interface operable to display information related to current status of said plurality of queues (see module 2.2: page 35; module 2.3: pages 54 and 64).

MS Project 2000 does not explicitly disclose a conversion system operable to convert real time to business time for display on said user interface.

MS Project 1998 discloses converting real time to business time (see module 5: lesson 5.2: pages 5-12 through 5-15, disclosing defining calendar hours so business days and operating hours can be interchanged).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of MS Project 1998 into MS Project 2000 because it is a combination of known elements that would perform the same function as they did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 14: MS Project 2000 discloses wherein said conversion system is operable to:

- determine the service time for work items in said plurality of queues (see module 2.2: page 35, disclosing determining the finish date of a task);
- select the calendar associated with each of said plurality of queues (see module 2.2: pages 24-30);

MS Project 2000 does not explicitly disclose the remainder of the limitations of this claim.

MS Project 1998 discloses a system operable to:

- index said calendar into a table having a real time index (see module 5: lesson 5.2: pages 5-12 through 5-15, disclosing defining calendar hours so business days and operating hours can be interchanged); and
- compute said service times into a time interval according to said table (see id.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of MS Project 1998 into MS Project 2000 because it is a

Art Unit: 3623

combination of known elements that would perform the same function as they did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

11. Claims 10-11, 15-16, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over MS Project 2000 in view of MS Project 1998, and further in view of Official Notice.

Claims 10, 15, 29: MS Project 1998 and MS Project 2000 do not explicitly disclose indexing by the following steps:

- selecting a minimum time interval;
- determining the calendar start time;
- subtracting from real time from the calendar start time; and
- taking the modulus of the calendar time by the minimum time interval.

Examiner takes Official Notice that this technique was well-known in the indexing and scaling arts at the time the invention was made. For example, this is a commonly used technique in constructing a graph. The smallest value to be placed on an axis is subtracted from the largest value to be placed on the same axis (thus inherently taking the absolute value). The resulting difference is divided by a desired interval to determine the scaled index for the axis. This can also be used to determine where to plot a point along the scaled index.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use well-known indexing techniques when indexing the calendar of MS Project

1998. One of ordinary skill in the art would have been motivated to do so for the benefit of creating an accurate and organized scale.

Claims 11, 16, 30: Claims 11, 16, and 30 are unpatentable for the same reasons as claims 10, 15, and 29, above (see § 112 rejections, above).

Additional Prior Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent number 6,704,409 to Dilip et al, directed to processing real-time transactions and non-real-time transactions.

U.S. pre-grant publication number 2003/0152212 to Burok et al, directed to assigning work items to resources.

U.S. patent number 6,356,632 to Foster et al, directed to call and agent selection in a call center based on agent staffing schedule.

U.S. patent number 6,754,333 to Flockhart et al, directed to wait time prediction arrangement for non-real-time customer contacts.

U.S. patent number 5,206,903 to Kohler et al, directed to automatic call distribution based on matching required skills with agent skills.

U.S. pre-grant publication number 2003/0215083 to McPartlan et al, directed to customer service request allocations based upon real-time data and forecast data.

U.S. pre-grant publication number 2003/0154184 to Chee et al, directed to resource management facilitation.

Art Unit: 3623

U.S. pre-grant publication number 2005/0041580 to Petrovykh, directed to anticipating and planning communication center resources based on evaluation of events waiting in a communication center master queue.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neil R. Kardos whose telephone number is (571) 270-3443. The examiner can normally be reached on Monday through Friday from 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Neil R. Kardos
Examiner
Art Unit 3623

NRK
3/21/08

/Beth Van Doren/
Primary Examiner, Art Unit 3623